

SPAWAR



***Logistics
Integrated
Information
Architecture***
LI²A

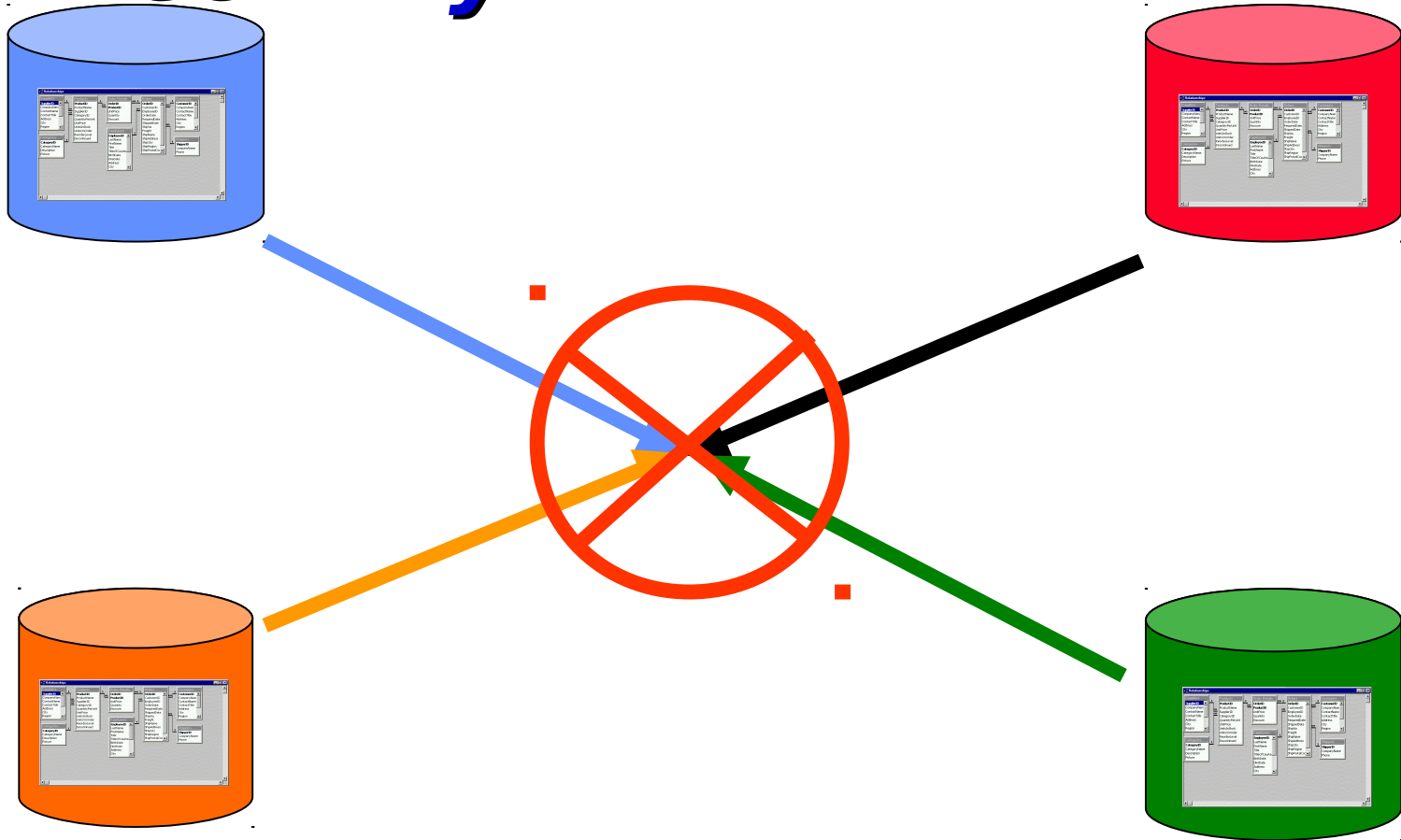
Project Focus

It is the intent of this project to provide an integrated information architecture and open methodology by which legacy and newly developed systems can satisfy information exchange requirements within an IDE, and non-connected applications can seamlessly integrate data from multiple sources. Participants will focus on supply data, but intend the architecture to be equally applicable to the entire ILS

Standardize business processes and data to achieve enterprise IDE capability

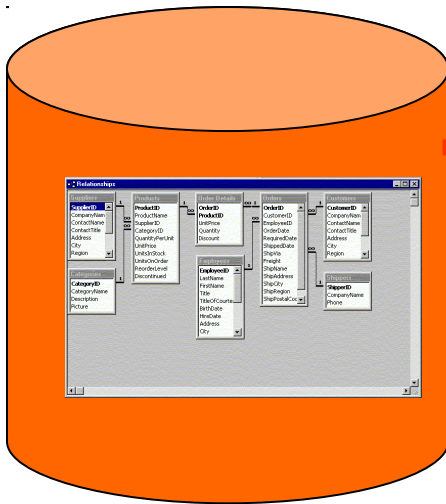


Problem 1: No Common Connectivity

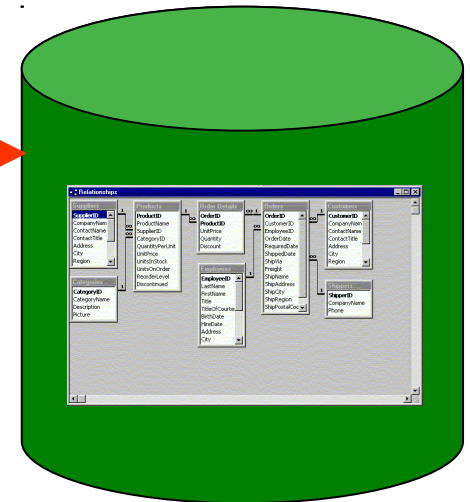


Problem 2: Proprietary Data Formats

ST*601*100002301
BA1*N*S*JP*BFTESTSED1**US*CA**APLU**Pre
sident Jackson
YNQ*QQ*N
YNQ*RZ*N
DTM*274*991013
P5*L*D*2809
P5*D*K*58886
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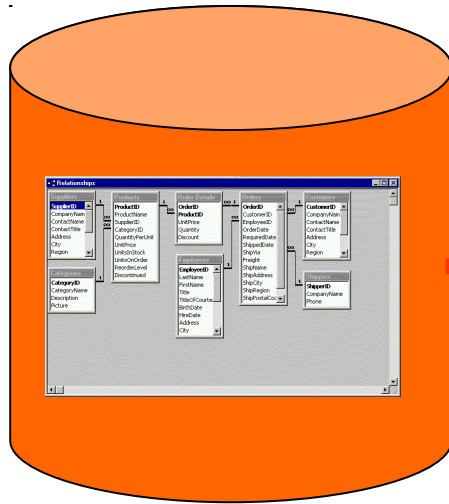
System A



System B

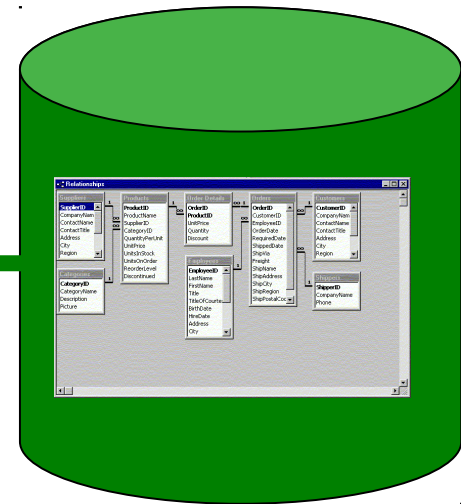
Problem 3: Metadata Mismatch

Tank
(Gun, Turret, Body, Wheels...)



System A

Tank
(Capacity, Fuel Type,...)



System B

XML: What Has it Done for Me

Lately?

- XML obliterates the need for standards
- By using XML, interoperability problems go away

• The Truth

- XML provides a mechanism for different organizations to understand:
 - Data
 - Metadata
- Commercial industry is taking advantage of this simple yet powerful capability
 - Forming consortiums to agree on common standards for exchanging data in XML



Debunking the Myth

- “XML lets us easily transform data from somebody else’s legacy format to my legacy format, so I don’t ever need to bother with standards again.”
- **Fallacy:** $N*(N-1)$, or dependency on a single vendor’s toolkit
- **Fact:** Commercial Industry has many of the same problems as DoD
 - They are doing something about it!

Bottom Line

Using XML to exchange data between legacy formats is viable, but it misses the true power of XML: The Integrated Data Environment!



LI²A: Objectives

- **Capture, in a set of architectural views, a means to enable interoperability for:**
 - Joint capability exchange of data capabilities between information systems
 - Integration of existing and required data at the application level
- **Characteristics**
 - Technology & vendor neutral
 - Based on widely accepted industry standards
 - Works equally well for legacy and modern systems
 - Widely supported by COTS tools



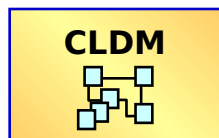
LI²A: Approach

- **Examine existing Logistics data models**
 - With high Joint applicability
 - Which accurately represent the relationships between high value data
 - Example: CLDM (DLMSO), JTAV model
- **Develop a set of “Core Business Objects” (CBOs) in XML from the model(s)**
- **Define simple rules by which the core objects in the “library” can be combined to satisfy complex Information Exchange Requirements**
- **Expose CBOs and rules publicly via a registry/repository**

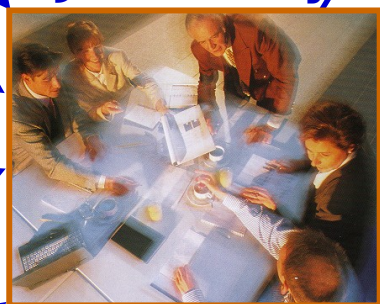


LI² A Concept

Logistics Data Models



Joint Body



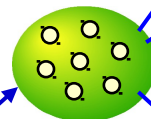
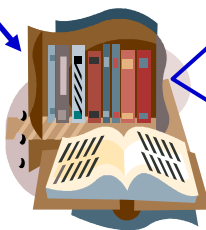
Information Architecture & Framework

- Flexible
- Open
- Extensible

Design in UML

Extract

Library of Business Objects (XML)



Core Business Process Objects

Demonstration

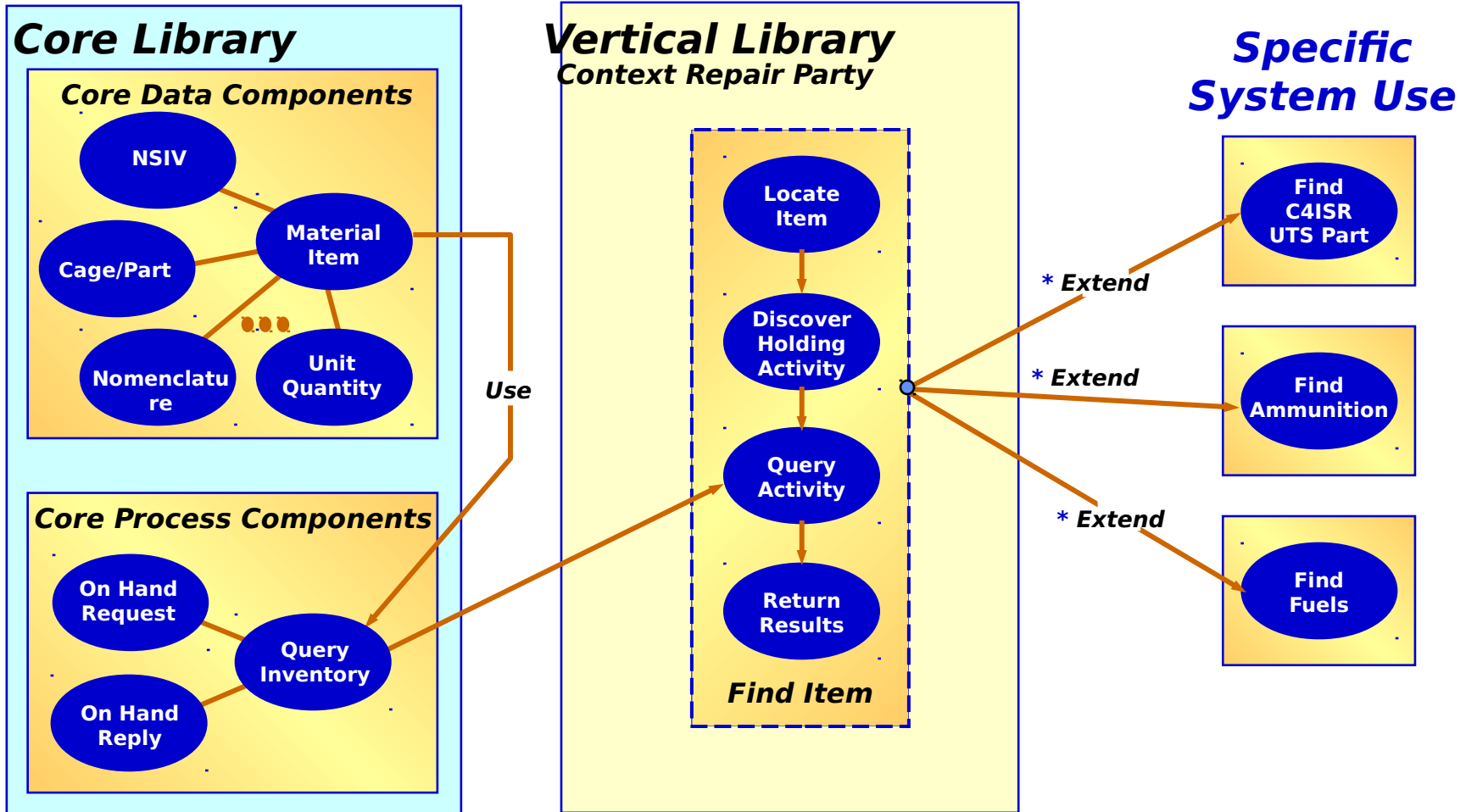


Use IDE XML Objects to Build Information Exchange Process and Data Payload



LI² A Concept - Example

System Specific Business Process



* "Extended" → essential part of "extensible architecture means reuse and add to for customization"

LI2A: To Model or Not

- **Data Models provide an excellent starting point**
 - Establish starting points of agreement
- **Data models are not the total answer**
 - Too rigid
 - Too complicated
 - Cultural baggage
- **KPP → Flexible, open architecture**

LI2A: Approach

- **Publish architecture**
- **Prove viability by conducting proof of concept demonstrations:**
 - DLA IDE
 - GCSS
 - Navy NMCI

Deliverables

- **Architecture**

- UML Artifacts describing views of process
- Develop a document describing it (see ebXML Technical Architecture document)
- Develop initial “Core Business Object Library”
- Define requirements for a registry/repository

- **Demonstrations**

- DLA IDE
- GCSS Portal
- Navy NMCI

- **Key Point: We Are Providing a Roadmap**

- Establishing the motivation for data owners to expose data in a federation of web-services



Summary

- ✓ **LI²A provides the information architecture needed to realize sophisticated data integration and knowledge management**
- ✓ **Based on simple, open standards**
- ✓ **Based on current industry initiatives**
- ✓ **Technology and vendor neutral**
- ✓ **Leverages existing data structures (models)**
- ✓ **Provides flexibility**
- ✓ **Scaleable**